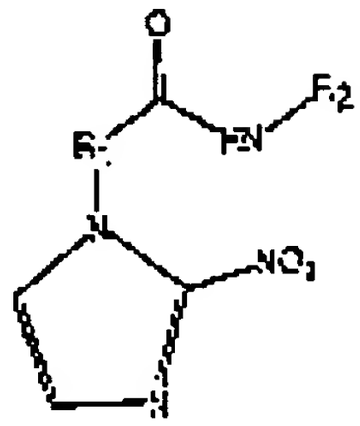
What is claimed is:

1. A compound having the formula:



wherein R_1 is CH_2; and R_2 has the formula $CH_2CX_2CHX_2$, wherein X is halogen or hydrogen and at least 1 carbon atom of said alkyl group is bound with at least one halogen atom.

2. The compound of Claim 1 wherein the halogen atom is fluorine.

3. The compound of Claim 1 wherein the halogen atom is bromine.

4. The compound of Claim 1 wherein R_2 is $CH_2CH_2CH_2Br$.

5. The compound of Claim 1 wherein R_2 is $CH_2CF_2CH_2Br$.

6. The compound of Claim 1 wherein R_2 is CH_2CF_2CHFBr.

7. The compound of Claim 1 wherein R_2 is $CH_2CF_2CHBr_2$.

8. The compound of Claim 1 wherein R_2 is $CH_2CF_2CH_2F$.

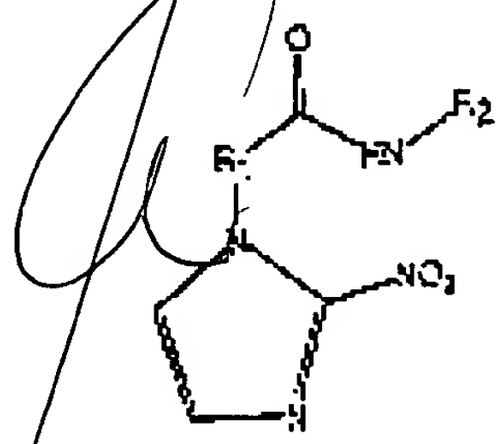
9. The compound of Claim 1 wherein R_2 is $CH_2CF_2CH_2F$.

10. The compound of Claim 1 wherein R_2 is $CH_2CF_2CHF_2$.

11. The compound of Claim 1 wherein R_2 is CH_2CHFCH_2F

12. The compound of Claim 1 wherein R_2 is $CH_2CHFCHF_2$

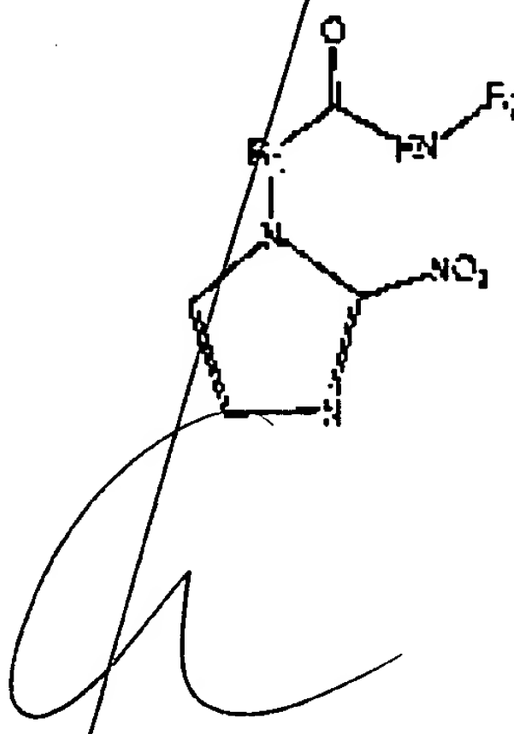
13. A compound bound to a protein, the compound having the formula:



wherein R_1 is CH_2; and R_2 has the formula $CH_2CX_2CHX_2$, wherein X is halogen or hydrogen and at least 1 carbon atom of said alkyl group is bound with at least one halogen atom.

14. A method for preparing a monoclonal antibody comprising:

introducing into a mammal a compound bound to a protein, the compound having the formula:

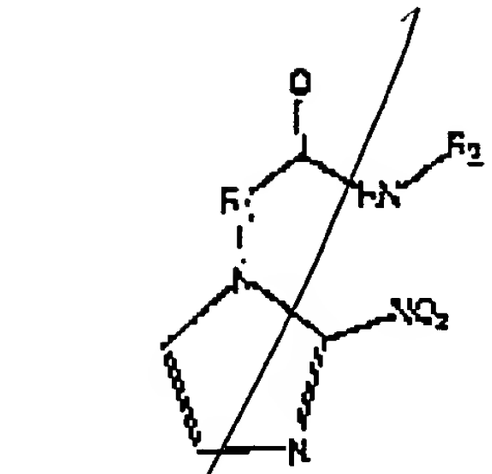


wherein R_1 is CH_2; and R_2 has the formula $CH_2CX_2CHX_2$, wherein X is halogen or hydrogen and at least 1 carbon atom of said alkyl group is bound with at least one halogen atom; and

fusing immune cells of the mammal with mammalian myeloma cells forming a hybridoma that produces antibodies specific for the compound bound to the protein.

15. The method of claim 14 wherein R_2 is $CH_2CH_2CH_2F$.

16. A monoclonal antibody specific for a compound, the compound's protein conjugate, the compound's reductive byproduct, or adduct formed between The compound and tissue protein, the compound having the formula:



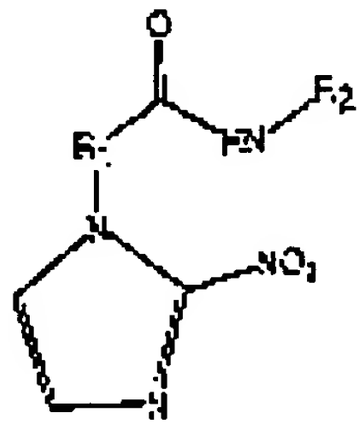
wherein R_1 is CH_2; and R_2 has the formula $CH_2CX_2CHX_2$, wherein X is halogen or hydrogen and at least 1 carbon atom of said alkyl group is bound with at least one halogen atom.

17. The monoclonal antibody of claim 16 wherein the halogen atom is fluorine.

18. The monoclonal antibody of claim 16 wherein R_2 is $CH_2CH_2CH_2F$.

19. A biological reagent kit comprising the monoclonal antibody of claim 16 bound ~~to a detection~~ moiety.

20. A method for detecting tissue hypoxia in a mammal comprising: introducing into the mammal a compound having the formula:



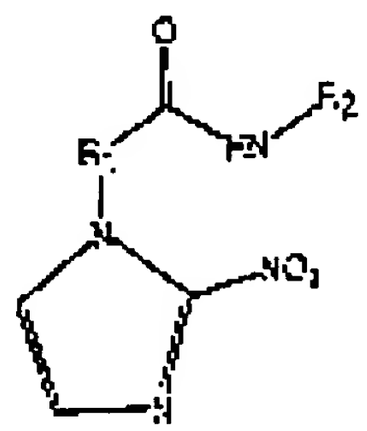
wherein R_1 is CH_2; and R_2 has the formula $CH_2CX_2CHX_2$, wherein X is halogen or hydrogen and at least 1 carbon atom of said alkyl group is bound with at least one halogen atom; and

imaging the portion of the mammal containing the tissue.

21. The method of claim 20 wherein the detection technique is PET.

22. The method of claim 20 wherein R_2 is $CH_2CH_2CH_2{}^{18}F$ and the detection technique is PET.

23. A kit for detecting tissue hypoxia comprising a compound having the formula:



wherein R_1 is CH_2; and R_2 has the formula $CH_2CX_2CHX_2$, wherein X is halogen or hydrogen and at least 1 carbon atom of said alkyl group is bound with at least one halogen atom; a protein; a monoclonal antibody specific for the compound the compound's protein conjugates, the compound's reductive by product, or adduct formed between the compound and tissue protein; standards comprising the compound bound to a protein; a monoclonal antibody bound to a detection moiety; and detection moieties.

24. The kit of Claim 23 wherein compound is bound to lysozyme, albumin, or Bowman Birk inhibitor.

25. The kit of Claim 23 wherein R_2 is $CH_2CH_2CH_2F$ and the protein is Bowman Birk Inhibitor.

26. The kit of Claim 23 wherein the detection moiety is a fluorophore, biotin, or an enzyme.